

University of Bahrain
College of Information Technology
Department of Computer Engineering
FINAL TEST
ITCE 341: Introduction to Microprocessor

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Date : January 24, 2008	<u>Student Name:</u>	
Time : 2 Hours	<u>Student ID No:</u>	Sec:

SHOW YOUR WORK

Q	Max Points		Scored Points
1	12		
2	12		
3	12		
4	14		
5	14		
6	12		
7	12		
8	12		
TOTAL	100	Grade out of 100	

Q1

If $SS = 2C34$ & $SP = FFEE$

- a) Calculate the physical address of the top of the stack

- b) Calculate the physical address of the lower range of the stack segment

- c) Calculate the physical address of the upper range of the stack segment

Q2

Assemble the following line:

1234 : 5678 JMP THERE

- a) If **THERE** is at **1234 : 39F0**

- b) If **THERE** is at **5A7B : 2C63**



Q3

- a) Assume 8086 at **5 MHz** clock, what DX value passed from the main program to the following delay procedure that makes the delay lasts for ten seconds?

```
DLY:      MOV CX , 10000 ; decimal
HERE:     LOOP HERE
          DEC  DX
          JNZ  DLY
          RET
```

- b) Disassemble the following instruction code:

3E 8B A3 C7 04



Q5

Write a procedure that asks you to enter from the keyboard only a **decimal digit** and displays its ASCII code on the screen. (for example, if you enter 0, then 30 will be displayed. ..and so on if you enter 9, then 39 will be displayed).

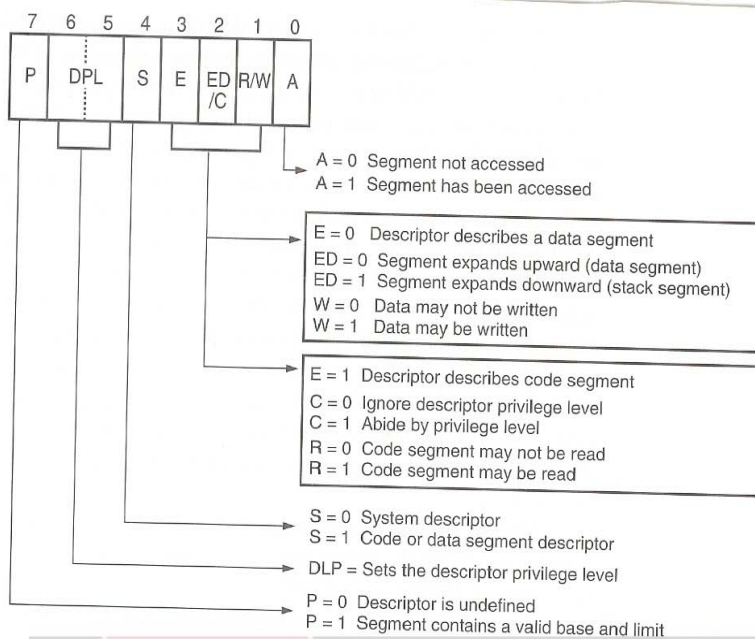
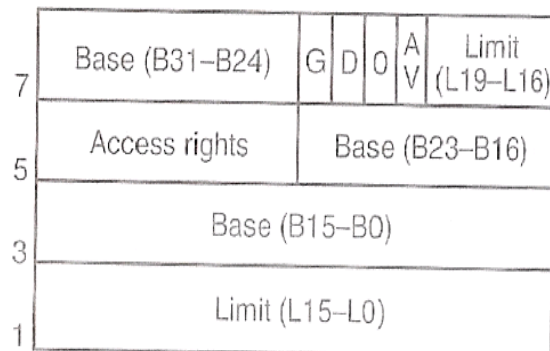
The program should not accept any character other than decimal digits.



Q6 Fill in binary the following 8 bytes of a writable STACK Segment Descriptor in 32-bit mode with lowest privilege, such that:

Base = 1234FC78 Size = 2 kB

80386 through Pentium 4 descriptor

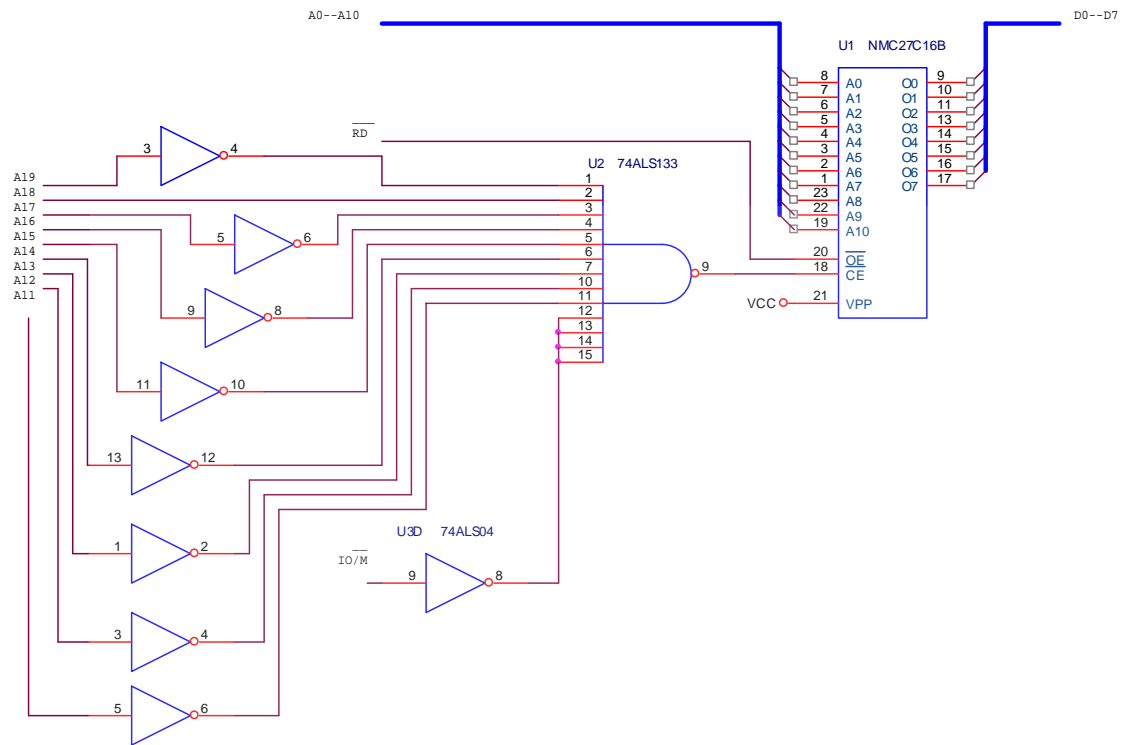


Note: Some of the letters used to describe the bits in the access rights bytes vary in Intel documentation.



Q7

Find the size and location of the ROM in the following circuit:



Q8

Convert the decimal number **(-6.25)** into single precision floating number

